~~SECRET~~
SECURITY INFORMATION

Drafting Officer:
25X1A9A

ADDE
file

NIE-40 (Economic)

MACHINERY

November 29, 1951

~~SECRET~~

~~SECRET~~
~~SECURITY INFORMATION~~

MACHINERY*

CONCLUSIONS

Acquisition of continental Western Europe will give the USSR large gains in machinery.

Western European production of machinery is considerably larger than that of the Soviet Bloc.

Western Europe has surplus machinery production and the Soviet Orbit is in short supply.

The Soviet Bloc, and to a small extent Western Europe, will gain a wider range of types and sizes of machines. The Soviet Bloc is now handicapped by the lack of variety of machinery for filling specific needs.

Availability of special machinery in Western Europe will permit the Soviet Orbit to discontinue such production and concentrate on production of simple items required in large quantities. This will result in a larger quantity of machinery produced due to a resulting higher efficiency in plant operation.

There will be quality improvement of machinery available for use in the Soviet Bloc. In general machinery now available to the Soviet Bloc lacks precision and durability and is deficient in other respects.

The Soviet Bloc will gain through advanced technology. Many technological developments in Western Europe have not been available to the Soviet Bloc.

The Soviet Bloc will gain through the ready availability of raw materials and components in Western Europe. The Soviet Bloc has been especially dependent on Western Europe for quality metals.

Both Western Europe and the Soviet Bloc will be cut off by blockade from traditional Western supplies of special types and sizes of machines not produced in either area. This deficit will in a short time be greatly alleviated through substitutions and new production.

---

* Studies made on the aggregate of machinery included only three not completely representative components (machine tools, automobiles and antifriction bearings). Tractors were not included because information on Western Europe was not available. Some items of machinery are covered in the Transportation Sector (motor trucks, locomotives, freight cars, inland water and air transport equipment). Many other components of machinery were not considered (i.e. metallurgical equipment, chemical and petroleum processing equipment, general industrial and electrical machinery). Conclusions drawn from these three components are not entirely representative of the aggregate of machinery. While a complete statistical base is not available on machinery, sufficient general information is available to enable us to arrive at fairly accurate conclusions. Some latitude has therefore been taken in writing this general conclusion.

~~SECRET~~
Security Information

NIE-40
Sector Report

MACHINERY

A. MACHINE TOOLS

I. Conclusions:

The acquisition of Western Europe's productive capacity in metal-cutting machine tools would be extremely valuable to the Soviet Orbit:

(1) Western Europe's productive capacity for the production of machine tools on a one shift basis is roughly equal to that of the Soviet Orbit's on a two to three shift basis;

(2) Though there is reason to believe that the Soviet Orbit has reached a rather high level of technology in machine tool production the acquisition of Western Europe would provide the Soviet Orbit with the additional technological skills of the West both in engineering and in numbers of skilled workers, particularly in the case of Switzerland and in West Germany;

(3) Although the Soviet Orbit would still be denied the more complex single purpose high production machine tools which are produced principally in the United States and to a lesser degree in the UK, the Soviets could apply the productive capacity and high degree of technology of Western Europe to the production of these more complex tools, while devoting their own efforts at home to increasing the unit production of the more general purpose tools.

~~SECRET~~

II Discussion

1. Production

a. Soviet Orbit

Production of metal-cutting machine tools in the Soviet Orbit in 1951 is estimated at some 145,350 tools. Production for Mid 1952, Mid 1953, and Mid 1954 is estimated to increase to rates of 156,050; 174,960; and 187,600 units respectively. It should be noted that these totals include Finland and Yugoslavia, and though Finland's production of machine tools is negligible, Yugoslavia's is estimated at 5000; 7000; 8000; and 9000 units for the same periods.

These totals to the best of our knowledge include all metal-cutting machine tools within the definition of a "power-driven machine, not portable by hand, which progressively removes metal in the form of chips", including the minute chip produced by grinding. And although they do come within this definition they do include also those machine tools (pedestal type tool grinders, small bench type drill presses, etc.,) which in ordinary United States usage would not be termed "production" machine tools. Though the exact number of how many of these types are included is not known it is believed that they do not exceed, at the very most, five percent of total production.

A detailed discussion of the reasoning underlying the production estimates is included in the Statistical Annex (Part III). As to the availability of raw materials, fuels, labor, etc., in the Soviet Orbit it is felt that there will be no shortages of any of these items due to the high priority accorded the machine tool as the basic non-substituteable requirement for any increase of any kind of industrial activity whatsoever.

b. Western Europe

A caveat must be noted for any direct comparison of the production estimates for Western Europe with the estimates for the Soviet Orbit. The Western Europe estimates were made on the basis of one shift, while

the Soviet Orbit is believed to be working on a two to three shift basis, thus invalidating any direct comparison of production figures.

Even so, Western Europe on a one shift basis is estimated to be able to produce (Estimated Productive Capacity 1951) some 145,500 units in 1951 as compared with almost the same number of units (145,300) estimated to be produced by the Soviet Orbit on a two to three shift basis. On the same basis, one shift as against two to three , Western Europe is estimated to be able to produce at the rate of 148,500 units by Mid 1952, and 171,680 units by Mid 1954, while the Soviet Orbit is estimated to be able to produce for those same periods at the rates of 156,050 units and 187,600 units respectively. Assuming the availability of labor and raw materials Western Europe should be able to outproduce the Soviet Orbit by increasing the number of shifts. Yet even if only operated on a one shift basis the productive capacity of Western Europe would be an extremely valuable acquisition, almost equalling total Soviet Orbit production.

25X1

The machine tool production of the Soviet Orbit and that of Western Europe are not in the strict sense of the word complements to one another; they both produce the same basic types. And even though there is considerable evidence that the Soviet Orbit has attained a rather high level of technology, it is believed that the technology of the West would be an extremely valuable addition to the Orbit, especially in the production of precision machine tools as are made in Switzerland and to a somewhat lesser degree in Western Germany, to say nothing of the valuable addition of the numbers of skilled workers.

Russia at the present time is increasingly concentrating her efforts on the manufacture of the more complex single purpose high production machine tools-the type of machine tool in which the United States and to a lesser degree the UK specialize in - as against the more general purpose machine tool. Western Europe likewise, though her primary manufacture is the general purpose tool, is shifting in

SECRET

Security Information

increasing proportion to the production of the single purpose tool, although the relative proportion is considerably smaller than the proportion manufactured in the United States. Should Soviet Russia overrun Europe it is conceivable that she might accelerate Western Europe's trend toward the single purpose tool at an even greater rate, if not apply Western Europe's whole effort to that end, while concentrating herself on increasing the unit production of the simpler general purpose tools at home. Certainly the Soviet Orbit would utilize the technology and skills of the West to the fullest, and although the more complex single purpose machine tools produced in the United States and the UK would be denied her the gap could be taken up in Western Europe, making the addition of Western Europe to the Soviet Orbit, as far as the production of machine tools, a formidable challenge.

2. Consumption

a. Soviet Orbit

The output of machine tools in the Soviet Orbit is completely consumed within the Orbit. There is no evidence of any stockpiling, or of any exportable surpluses. Though there have been of late occasional offers by the Soviets of Soviet-made machine tools for export sale outside the Orbit it is believed that these offers were made primarily for propaganda purposes. There is as yet no evidence of any sales having been consummated.

There is little information at this time as to the amount of imports of machine tools into the Orbit. Since the inception of the Five Year Plans for industrialization, the Soviet Union has bent her efforts to becoming more and more self-sufficient and independent of imports, and the history of the Soviet machine tools industry bears this out. She does, however, have need of the more complex single purpose machine tools, the larger and heavier machine tools, gear-cutting and precision tools, and it is to the production of these tools that the Soviet Orbit is presently applying itself.

SECRET

[redacted]

Security Information

b. Western Europe

There is an exportable surplus of machine tools in Western Europe even though Western Europe is not working at full capacity. The greater share of these are the more general purpose machine tools, although the trend toward the production of the single purpose tools is increasing. At the present time the United States is buying up the major share of this output.

Machine tools which are considered "critical" as an export item as far as the Orbit is concerned are either on a complete embargo (List I) or on a limited quota basis (List II). Some tools, however, just how many it is difficult to estimate, are getting through, but as the lists become more careful in definition and wider in scope, the numbers of machine tools imported into the Soviet Orbit will accordingly decrease.

[redacted]

Next 3 Page(s) In Document Exempt

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0

ESTIMATED PRODUCTION, PRODUCTION CAPACITY, AND INVENTORY
SOVIET BLOC AND WESTERN EUROPE

Table 1

Country	Estimated production 1951	Est. annual production rate Mid-1952	Peak annual prod. World War II	Estimated inventory End-1951	Estimated inventory Mid-1952	Estimated production capacity 1951	Estimated production capacity Mid-1952	Estimated annual production rate Mid-1953	Estimated annual production rate Mid-1954
USSR	85,000(+-10%)	93,000	21,000 (1944)	1,063,500	1,085,000	85,000	93,000	100,000	103,000
Soviet Satellites 1951:									
Poland	8,650	9,250	N/A	94,600	96,600	8,650	9,250	11,000	12,200
Czechoslovakia	22,000	24,500	N/A	190,000	202,000	22,000	24,500	29,500	32,700
Germany, East	20,000	22,000	N/A	395,000	406,000	20,000	22,000	26,000	30,000
Hungary	4,500	N/A	N/A	40,000	40,000	4,500	N/A	N/A	N/A
Romania	200	300	N/A	25,000	25,000	200	300	460	700
Bulgaria	Neg.	Neg.	N/A	10,000	10,000	N/A	N/A	N/A *	N/A *
Albania	Neg.	Neg.	N/A	3,000	3,000	N/A	Neg.	Neg.	Neg.
Communist China	Neg.	Neg.	N/A	50,000	50,000	N/A	Neg.	N/A	N/A
North Korea	Neg.	Neg.	N/A	Neg.	Neg.	N/A	N/A	Neg.	Neg.
Inner Mongolia	Neg.	Neg.	N/A	Neg.	Neg.	N/A	N/A	Neg.	Neg.
Finland	Neg.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Yugoslavia	5,000	7,000	N/A	20,000	20,000	5,000	7,000	8,000	9,000
Total, Soviet Bloc	145,350	156,050	21,000	1,891,100	1,937,600	145,350	156,050	174,960	187,600

[redacted]

25X1

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0

ESTIMATED PRODUCTION, PRODUCTION CAPACITY, AND INVENTORY
SOVIET BLOC AND WESTERN EUROPE

Table 2.

Country		Estimated production (Most recent Yr. Avail)	Est. annual production rate Mid-1952	Peak annual prod. World War II	Estimated inventory Most recent year	Estimated production capacity 1951	Estimated production capacity Mid-1952	Estimated annual production rate Mid-1953	Estimated annual production rate Mid-1954
Belgium	(1950)	2,100		na	125,000	3,800	3,800		3,800
Denmark	(1948)	1,350 d/		na	20,000	1,500	1,500		1,500
France	(1949)	24,010		1948-25,664	600,000	32,000	32,000		32,000
Germany, Federal Republic	(1950)	50,800 h/		1944-87,000 g/	na	52,000	55,000		75,000
Italy	(1949)	13,440		1942-28,000	300,000	27,000	27,000		30,000 b/
Netherlands	(1948)	590 c/		1948	na	650	650		650
Norway	(1948)	280 a/		1948	na	475	475		475
Portugal	(1950)	87		Pk. war yr. 210	20,000	200	200		380
Spain	(1948)	1,300 a/			na	1,375	1,375		1,375
Sweden	(1948)	6,300 e/		1950	na	6,500	6,500		6,500
Switzerland	(1950)	19,750 f/		1950	na	20,000	20,000		20,000
	Total	120,007		na	na	145,500	148,500		171,680

* Excluding Austria, Finland, Greece, Luxembourg, Saar, Turkey, West Berlin, Yugoslavia.

a/ The value of production in 1948 was 3,461,000 kr. or $696,378. Using an estimated average price of $2,500 per machine tool yields a unit production of 279 machine tools.

b/ Under pressure (with disregard for price) industry could reach this output. This would mean concentration of the industry on machine tools, to the neglect of other production.

c/ The value of production was 3,905,000 fl. or $1,468,000.

d/ The value of production was 16,189,000 kr. or $3,365,000.

e/ The value of production was 56,833,000 kr. or $15,787,000.

f/ The value of production was $49,416,000. A survey of 67 of the 110 machine tool manufacturers in Switzerland shows 1950 production of at least 16,000 metal-cutting machine tools, 2,000 metal forming machine tools, and 2,000 miscellaneous machines of types not generally considered machine tools.

g/ 130,000 metric tons.

h/ 45,350 produced in the Bizone in plants employing more than ten workers. 12% added for the French Zone on the basis of value figures available for both areas.

i/ The value of production was £800,000.

[redacted]

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0

Next 1 Page(s) In Document Exempt

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0

NIE-40
Sector Report
21 Nov. 1951

[redacted] SECURITY INFORMATION

MACHINERY

B. AUTOMOTIVE - PASSENGER CARS

I. Conclusions

If the USSR overruns Western Europe in 1952, all passenger car production in both the Soviet Orbit and Western Europe, which is estimated in 1951 to be 910,000 cars, will be converted to truck and other armament production, and Soviet needs for passenger cars will be satisfied by confiscating cars in Western Europe, which at the end of 1951 will have an inventory of about 4,500,000 passenger cars.

[redacted]

II. Discussion

1. Production

a. Soviet Orbit

The production of passenger cars in the Soviet Orbit today is carried on only in Czechoslovakia, East Germany and the USSR. These cars are produced for the use of party officials and for export to western countries in trade for strategic materials. The Soviets are not concerned with providing passenger cars for their citizens and will convert all passenger car production to truck and armament production if they overrun Western Europe in 1952 and expect a counter invasion by the Allies.

b. Western Europe

The production of passenger cars in Western Europe will be converted to the production of trucks and other armaments if the USSR overruns Western Europe in 1952, and prepares to repel an Allied invasion in 1954. Privately owned vehicles in Western Europe will be confiscated by the Soviet authorities to meet their administrative needs for passenger cars.

2. Consumption

a. Soviet Orbit

The passenger car industry of the U.S.S.R. and Satellites is small compared to the passenger car industry of Western Europe, and the product is largely consumed in the domestic economy. Some cars are exported in exchange for critical materials, but the loss of this market will not effect the industry because it is assumed that the industry will be entirely converted to truck and armament production.

SECRET

Next 4 Page(s) In Document Exempt

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0

[redacted]

SECURITY INFORMATION

ESTIMATED PRODUCTION, PRODUCTION CAPACITY, AND INVENTORY

PASSENGER CARS

Country	Estimated production 1951	Est. annual production rate Mid-1952	Peak Annual prod. World War II	Estimated inventory End-1951	Estimated inventory Mid-1952	Estimated production capacity 1951	Estimated production capacity Mid-1952	Estimated annual production rate Mid-1953	Estimated annual production rate Mid-1954
USSR	50,000	50,000	0	133,500	152,000	65,000	65,000	0	0
Soviet Satellites 1951:									
*Poland	0	0		25,000	0	0	0	0	0
Czechoslovakia	25,000	25,000	1,261	88,600	85,400	25,000	25,000	0	0
Germany, East	9,300	10,000	0	40,000	40,000	14,000	14,000	0	0
*Hungary	0	0	0	10,000	10,000	0	0	0	0
*Romania	0	0	0	10,000	10,000	0	0	0	0
*Bulgaria	0	0	0	negligible	negligible	0	0	0	0
*Albania	0	0	0	negligible	negligible	0	0	0	0
*Communist China	0	0	0	N.A.	N.A.	0	0	0	0
*North Korea	0	0	0	N.A.	N.A.	0	0	0	0
*Inner Mongolia	0	0	0	N.A.	N.A.	0	0	0	0
*Yugoslavia	0	0	0	N.A.	N.A.	0	0	0	0
**Finland	0	0	0	30,000	31,000	0	0	0	0
Total Soviet Bloc	84,300	85,000		337,100	328,400	104,000	104,000	0	0

[redacted]

25X1

[redacted]

SECURITY INFORMATION

PASSENGER CARS (Continued)

Country	Estimated production 1951	Est. annual production rate Mid-1952	Peak Annual Prod. World War II	Estimated inventory End-1951	Estimated inventory Mid-1952	Estimated production capacity 1951	Estimated production capacity Mid-1952	Estimated annual production rate Mid-1953	Estimated annual production rate Mid-1954
Western Europe:									
Austria a/	0			55,000		0	0	0	0
Belgium	0			350,000		0	0	0	0
Denmark	0			129,000		0	0	0	0
Finland	0			35,000		0	0	0	0
France b/	400,000			1,680,000		400,000	480,000	0	0
West Germany	268,000			793,000		268,000	335,000	0	0
Italy	145,000			750,000		175,000	175,000	0	0
Netherlands	0			175,000		0	0	0	0
Norway	0			68,000		0	0	0	0
Spain	70			60,000		70	84	0	0
Sweden	12,500			268,000		16,000	20,500	0	0
Switzerland	0			175,000		0	0	0	0
Total, Western Europe	825,000			4,538,000		859,070	1,010,584	0	0
Grand Total	909,870			4,875,100		963,070	1,114,584	0	0

[redacted]

25X1

SECRET
SECURITY INFORMATION

C. ANTIFRICTION BEARINGS*

I. Conclusion

Western Europe represents a very rich source of antifriction bearings to the Soviet Orbit. By placing Western Europe's factories on a three-shift basis, which will require additional skilled labor and additional high grade bearings steel, present production in Western Europe could be increased from 125,000,000 units a year to 293,000,000 units a year. It has been assumed that this increased production could be accomplished by mid-1954.

Traditionally, Western Europe has supplied Eastern Europe with antifriction bearings. The quality of bearings and the variations of types and sizes of bearings produced in Western Europe has been far superior to Soviet Bloc production. It is estimated that over 30 million bearings are now being imported by the Soviet Orbit from Western Europe.

The Soviet Orbit, at present, is not self-sufficient in antifriction bearings. The acquisition of Western Europe by the USSR would alleviate the shortage of antifriction bearings in the Soviet Orbit. One slight liability to this combined area of Western Europe and the Soviet Orbit would be the small amount of specialized bearings which are manufactured only in the United States.

*Unless otherwise stated, bearings in this report will refer to antifriction bearings.

SECRET

SECURITY INFORMATION

II. Discussion

1. Production

a. Soviet Bloc

The production estimates of the Soviet Bloc are based mainly on an individual analysis of each plant producing antifriction bearings. (For dissent with OIR over estimates on USSR see Statistical Annex.)

Although the investment plans of the Soviet Bloc countries have given top priority to the bearings industry, current production of all types of antifriction bearings is below minimum industrial and military requirements. The goal of the fourth Five Year Plan in the USSR was to be 100 million units a year in 1950. This goal has not been reached and imports are still needed to supplement domestic production.

b. Western Europe

Western Europe's bearing production in 1950 amounted to approximately 125,000,000 units a year operating on a one-shift basis. About 25% to 30% of present Western European production is believed to be over and above current domestic requirements. Current production could be increased by placing the industry on a three-shift basis. It is estimated that the total capacity of Western Europe's antifriction bearings industry amounts to approximately 296,000,000 units a year.

2. Consumption

The Soviet Orbit has been and still is an importer of antifriction bearings. It is estimated that the USSR in 1950 imported approximately 15 to 20,000,000 units and that the Satellites imported an estimated 15 to 20,000,000 bearings. Imports came in large part from Sweden, Italy, France, Austria, and West Germany. Accurate import statistics are difficult to obtain due to the clandestine trade in bearings.

Stockpiles have been reported to exist in both the USSR and the German Ovzone; however, the problem of rusting and the difficulty of rigid standardization would prevent a large stockpile of antifriction bearings.

The USSR's wartime requirements for bearings have been estimated to amount to a minimum of 85 to 90,000,000 units. With the acquisition of Western Europe, the Soviet Orbit would have no difficulty fulfilling its wartime bearing requirements.

Next 1 Page(s) In Document Exempt

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0

[redacted]

SECURITY INFORMATION

ANTIFRICTION BEARINGS

ESTIMATED PRODUCTION, PRODUCTION CAPACITY, AND INVENTORY

(Unit measure: in thousands)

Country	Estimated production 1951 (±10%)	Est. Annual production rate Mid-1952 (±10%)	Peak annual prod. World War II	Estimated inventory End-1951	Estimated inventory Mid-1952	Estimated production capacity Mid-1951 (±10%)	Estimated production capacity Mid-1952 (±10%)	Estimated production capacity (±20%)	Estimated annual production rate Mid-1953	Estimated annual production rate Mid-1954 (±20%)
USSR	68,000	70,000	45,000	N.A.	N.A.*	68,000	70,000	90,000		98,000
Soviet Satellites ** 1951										
Poland	200	300	0	0	0	200	300	400		500
Czechoslovakia	6,000	7,000	700	0	0	6,000	7,000	10,000		12,000
Germany, East	8,000	10,000	14,000	N.A.	N.A.	8,000	10,000	12,000		16,000
Hungary	0	0	0	0	0	0	0	0		0
Romania	100	200	0	0	0	100	200	300		500
Bulgaria	0	0	0	0	0	0	0	0		0
Albania	0	0	0	0	0	0	0	0		0
Communist China	0	0	0	0	0	0	0	0		0
North Korea	0	0	0	0	0	0	0	0		0
Inner Mongolia	0	0	0	0	0	0	0	0		0
Finland	0	0	0	0	0	0	0	0		0
Yugoslavia	50	50	0	0	0	50	50	100		200
Total: Soviet Bloc (Including Finland and Yugoslavia)	82,350	87,550	59,700	N.A.	N.A.	82,350	87,550	112,800		127,200

*Not available

[redacted]

25X1

ANTIFRICTION BEARINGS [a] - Cont.

(Unit measure: in thousands)

Country [b]	Production 1950	Est. Production 1951	Est. Annual production rate Mid-1952	Peak annual prod. World War II	Estimated inventory End-1951	Estimated inventory Mid-1952	Estimated production capacity Mid-1951	Estimated production capacity Mid-1952	Estimated production capacity Mid-1953	Estimated annual production rate Mid-1954
Western Europe										
Austria	4,140	5,000 m/					5,000	5,000		10,000
Belgium	0	0					0	0		0
Denmark	0	0					0	0		0
France	24,108	27,000 n/					27,000	27,000		55,000
Germany, West	38,519 i/	46,500 j/		77,000 (yr. 1943)			46,500 k/	56,000 k/		77,000
Italy	21,876 h/	22,500 o/					25,000	28,000		55,000
Netherlands	0	0					0	750 g/		1,500
Norway	neg. d/	neg.					neg.	neg.		neg.
Portugal	0	0					0	0		0
Spain	1,000 l/	1,500 l/					2,000 f/	2,500 f/		5,000
Sweden	28,500	32,000 n/					32,000	35,500		70,000
Switzerland	7,000	10,000					10,500	10,500		20,000
Total, Western Europe	125,143	145,000					148,000	165,250		293,500
Grand Total		227,350					230,350	252,800		420,700

25X1

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0

Next 15 Page(s) In Document Exempt

Approved For Release 2005/05/12 : CIA-RDP79R01012A001200010024-0